

Fig. 1 is a flowchart illustrating a high speed scalable multiplier. The flowchart starts with inputs X (102) and Y (104) being processed by block 100 to calculate P = (X + Y)/2 and Q = (X - Y)/2 (106). The flow then branches into two decision diamonds: 108 (Is P > one-half full scale (F)) and 114 (Is Q > one-half full scale (F)). If P is greater than one-half full scale (F), block 110 calculates K = 1 * F. If not, block 112 calculates K = 0. If Q is greater than one-half full scale (F), block 116 calculates L = 1 * F. If not, block 118 calculates L = 0. The flow then proceeds to block 120, which calculates A = (P - K/2)^2, B = (Q - L/2)^2, C = K * P, D = L * Q, E = (K/2)^2, and F = (L/2)^2. Finally, block 122 calculates the Product = A - B + C - D - E + F.

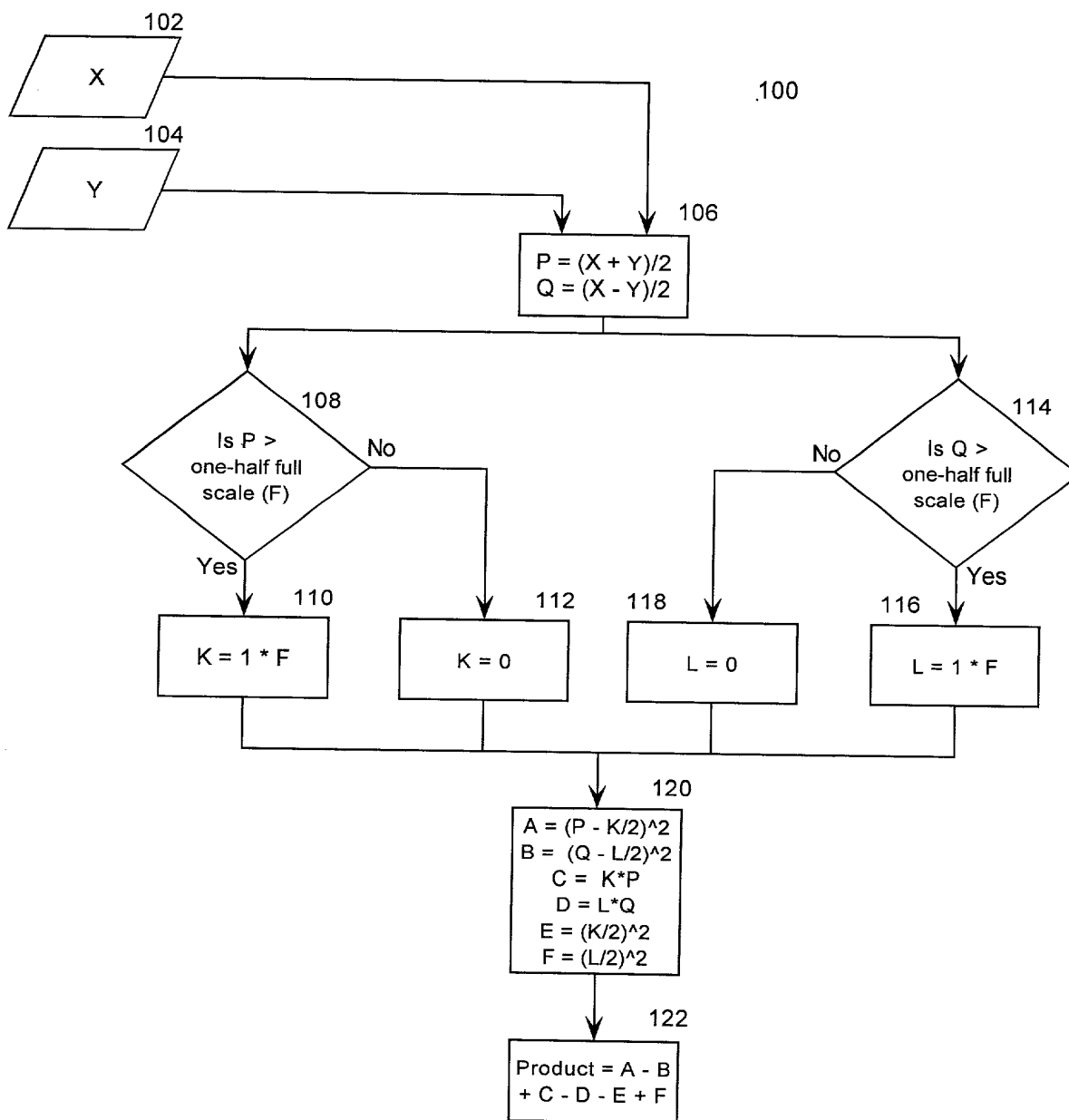


Fig. 1

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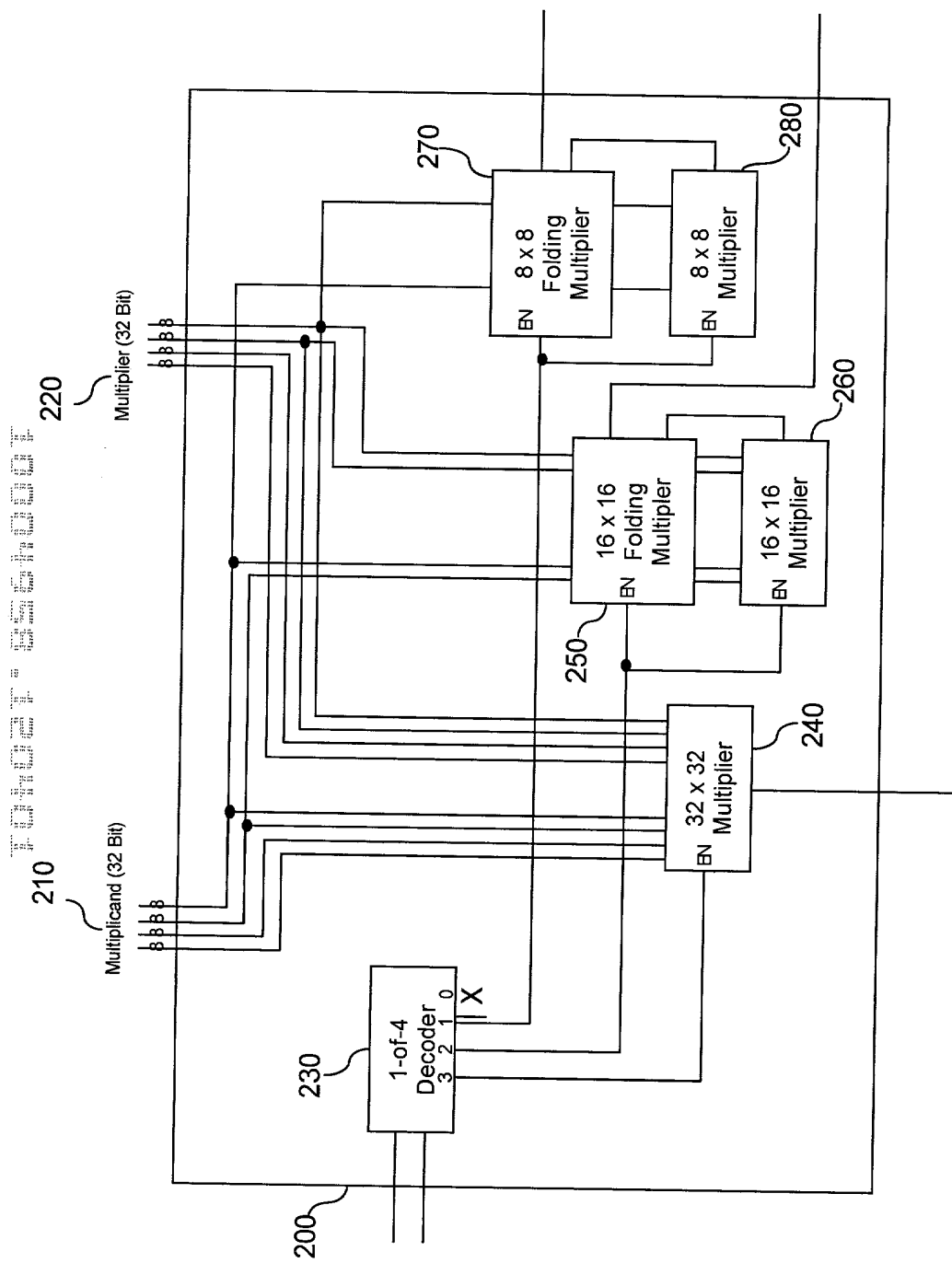


Fig. 2